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ABSTRACT

A study investigated the effect of the language in which a text is written on the imagery and emotional response of biliterate readers. Subjects were 64 native Mandarin-speaking university students majoring in English in a Chinese university. Subjects read a letter describing a typical trip on a third-class train in either English or Chinese, then listed and rated the strength (none to vivid) of the mental images they formed during reading. They also described and rated affective responses, and indicated the degree of difficulty they had in reading the letter. Results indicate that readers of the Chinese text reported more imagery and emotional response than readers of English, although ratings of these factors did not vary greatly across languages. Reading time was almost three times as great for the English text. These results contrasted sharply with those of an earlier study, in which subjects had lived in the United States. Contains 14 references. (MSE)

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Imaginative Aspects of Comprehension in First and Second Language

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Objective and Rationale

The objective of this study was to examine the effect of the language in which a text is written on the imagery and emotional response of biliterate readers. Recent research has shown that imaginative processes (i.e., imagery and emotional response) are an inherent, central part of reading (e.g., Goetz, Sadoski, Fatemi, & Bush, 1994; Goetz, Sadoski, Stowe, Fetsco, & Kemp, 1993; Sadoski, Goetz, & Fritz, 1993; Sadoski, Goetz, & Kangiser, 1988; Sadoski & Quast, 1990). This research supports the view that reading involves dual coding in the verbal and nonverbal systems (e.g., Goetz & Sadoski, in press; Paivio, 1971, 1986; Sadoski & Paivio, 1994; Sadoski, Paivio, & Goetz, 1991).

Although this research has employed a variety of texts (e.g., short stories, newspaper articles), it has failed to address the possible relationship between the language in which a text is written and the experience that the text produces in biliterate readers. This study investigates the imaginative component of comprehension and how it varies in first and second language reading. Our subjects were native speakers of Mandarin who were bilingual speakers/readers of English.

There is considerable evidence that cultural background affects reading comprehension (e.g., Anderson, Reynolds, Schallert, & Goetz, 1977; Bartlett, 1932; Reynolds, Taylor, Steffensen, Shirey, & Anderson, 1981; Steffensen, Joag-dev, & Anderson, 1979). When someone reads a culturally familiar text, reading is faster, more material is recalled, and appropriate elaborations are more frequent. Conversely, a culturally unfamiliar text is read more slowly, less is recalled, and distortions are more common.

In the present study, a culturally familiar text was used. However, there is also evidence that reading in a second language is slower than in a first language, even if the reader is highly proficient and even if the text is based on familiar background knowledge. This can be explained by differences in processing required in the two languages. For native readers of Mandarin, for example, significant changes must be made to accommodate alphabetic vs. logographic processing. This suggests that more attention is directed to the perceptual and linguistic processes required by the verbal system and less is available for imagery and emotional response in the nonverbal system.

Method

Subjects

The subjects were 64 undergraduates majoring in English at Liaoning Normal University in Dalian, China. Forty-seven were women, 17 men. (The disproportionate number of women reflects enrollment in English at the university.) All spoke Mandarin as their first language and English as their second language. Students were asked to participate in the study by their professors, but participation was voluntary.

Materials

A letter was written in Chinese which described a typical trip on a third-class train. It was then translated into English, and the equivalence of the two versions was assessed through back-translation. After adjustments were made, the resulting text was three single-spaced pages long in English (14 paragraphs).

Experimental booklets were prepared in English and Chinese, consisting of initial instructions, the letter, and instructions for imaginative process

reports. The language used in the booklets was consistent throughout.

Procedure

Students were randomly assigned to the English or Chinese language materials (tested separately), and asked to read the letter. They were told that they would be timed, but that it was not a test of reading speed and that they should read for comprehension.

After reading the passage. subjects encountered a set of instructions asking them to list the mental images they formed during reading. They then rated the strength of their images for 24 segments of text (determined by topic shifts) on a five-point Likert scale, with 1 indicating no mental imagery and 5 indicating vivid imagery.

Similar procedures were followed in eliciting affective responses: Subjects first completed a free-report of emotional responses, then rated the strength of their emotional responses to the 24 text segments on a five-point Likert scale. Following the emotional response ratings, subjects rated the difficulty of understanding the letter and provided information about themselves and their linguistic background.

Each session of 10 20 subjects was conducted in the language used in the experimental booklet. The sessions took approximately one hour. At the conclusion of each session, subjects were debriefed and the experiment was briefly discussed.

Results

Multivariate analysis of variance was used to test the effect of text language for the variables summarized in Table 1. In this analysis, the effect of text language was significant, $F(5, 57) = 97.2$, $p < .0001$. Follow-up univariate analyses revealed that readers of the Chinese text produced more imagery and emotional response reports than readers of English. Imagery and emotional response ratings (averaged across text units for each subject) did not differ between the two languages, although ratings were slightly higher for readers of Chinese. Reading times were nearly three times longer for the English text.

Conclusion

The results of this study contrast sharply with those we reported last year. In that study, we found no difference in the number of imagery and emotional response reports reported by readers of English and Chinese texts. In that study, however, the subjects were graduate students who had lived and studied in the United States for some time and had extensive experience and expertise with English. Taken together, these two studies suggest that although imagery and emotional response occur at various levels of second language proficiency, limited proficiency can limit access to the imaginative aspects of comprehension.

These results add to previous theory and research that has argued that theories of reading which focus exclusively on comprehension and recall, ignoring the imaginative processes, provide an incomplete and inadequate account of the reading experience (e.g., Goetz & Sadoski, in press; Sadoski & Paivio, 1994; Sadoski, Paivio, & Goetz, 1991). Access to imagery and

emotional response while reading in a second language may facilitate the accumulation of sufficient experience to become competent in second language reading. By the same token, the development of proficiency sufficient to provide a full, rich reading experience may be an important objective of second language learning programs.

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Table 1

Means (Standard Deviations) and Significance Tests for Readers of Chinese and English Texts

Text Language	No. of Image Reports	No. of Affect Reports	Imagery Rating	Affect Rating	Reading Time (Minutes)
Chinese n = 32	16.72 (8.18)	8.56 (3.72)	3.80 (0.55)	3.84 (0.50)	3.48 (0.65)
English n = 32	6.03 (2.62)	4.69 (2.33)	3.65 (0.69)	3.55 (0.69)	9.42 (1.39)
F(1, 62) p	49.6 <.0001	24.9 <.0001	0.98 >.30	3.92 =.052	469 <.0001